

# ONTOLOGICAL RELATIONS AND THE CAPABILITY MATURITY MODEL APPLIED IN ACADEMIA

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## ABSTRACT

This work presents a new approach to the discovery, identification and connection of ontological elements within the domain of characterization in learning organizations. In particular, the study can be applied to contexts where organizations require planning, logic, balance, and cognition in knowledge creation scenarios, which is the case for the scenario we are proposing here as the primary one to consider in universities and academia. The model we are focusing on and proposing is grounded in the establishment of existing connections among people, processes, and technology, which form the compounds of the model being what we understand for the Experiential Learning Cycle (ELC) and the Imaginary Experiential Learning Cycle (IELC). Hence, a diagnosis method is proposed in the form of a ‘harmonograma’, which will serve as the basis to establish what we consider the Dynamic Balance Point (DBP) as a tool to be applied to identify the characteristics that mobilize cognition, and for which points need to be improved. Therefore, individuals (i.e. a person as a conceptualization) are concerned with personal knowledge, skills, experiences, and with the technology and processes that enable dealing and managing it. We certainly believe that the application of DBP as a self-diagnosis model could successfully contribute to this interaction of Technologies, Processes and People in the cognitive-behavioral perspective.

## KEYWORDS

Ontology, experiential learning, dynamic balance point

## 1. INTRODUCTION

Davenport and Prusak (1998) have already stated that knowledge is an unrivaled asset, which is not consumed with use, but quite the opposite: through the use of existing knowledge it increases its value. This study presents a new approach to integrate relevant aspects of people, technologies and processes through Dynamic Balance Point (DBP)<sup>1</sup>

The theme will focus from the information theory to the consideration of the argument of the opponent. The argument of the opponents is that it is the functions of the brain that help in the process of perception between the inner and outer world. Together in this process is the interaction of gender archetypes. These archetypes of gender have spiritual and social power for civilizations that culture, and can be studied scientifically. These functions allow interaction with CAV (Experiential Learning Cycle), with the processes of perception that arise in interpersonal communication between the technologies and processes and people on the construction of cognitive behavior.

I would divide into four types with clearer punctuation. In the structure of CAV, the triggers of cognitive behavior in human beings are the characteristics that mobilize entrepreneurial cognition. The characteristics that mobilize are divided into four main types: the awakening, which leads the skills that will help in planning, guiding the decision, which is a difficult issue because researchers are undecided on a solution, but the uncertainty principle is intrinsic to the event, the decision is a logical response to the needs of CAV the answer may not be applicable, the plan puts into practice free will through action: the structure, which consists of and symbolic logic, consistency with the practice of understanding in the process of kinesthetic action in behavior: running, whose character implies putting into practice the knowledge to improve the

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<sup>1</sup> First introduced as PED from its original Portuguese translation (Ponto de Equilíbrio Dinâmico)

quality of life experienced in CAV. The theoretical basis of CAV was developed through experience gained in Solid State Physics (electromagnetic fields), the behavior of natural phenomena seen and understood through learning cycles in the TRANS-disciplinary process, applying inductive and deductive logic of knowledge in neuroscience. CAVI was theoretically established to encourage the study area of the thesis in the process of experimental psychology of perception the complexity of the behavior of the algorithm is not a time polynomial. An ontological relationship between CAVI and CAV was developed with the principles of the theory of quantum physics, hence arises a 50% probability of belonging to the phenomenon of CAVI, the other 50% belong to the phenomenon of CAV (uncertainty principle). However, cognitive-behavioral psychologies, physics, ontological phenomenology, were heuristic research and this research contributes to 'trans-disciplinary events'.

CAVI and CAV have contributed to the theoretical point of dynamic balance (DBP) among cultures (interpersonal relations), technology (the imaginary) and processes (for the syncretism of ideas) of being human. Concluding and first answer from CAV and CAVI, within the holistic vision of the cognitive study of alchemy, one can initially see the need to define the layout that flows and balance. CAV (the real world physical body) is experiential learning cycle, which begins in behavior, fulfilling the algorithm of the first cycle.

## 2. CONCEPTUAL RELATIONS IN DYNAMIC BALANCE POINT (DBP)

The Dynamic Balance Point (DBP) was coined by Oliveira (Oliveira, 2002) and it is a powerful way to manage, in an integrated manner, the interactive forces that exist when people, technology and process are involved. It is shown in figure 1.

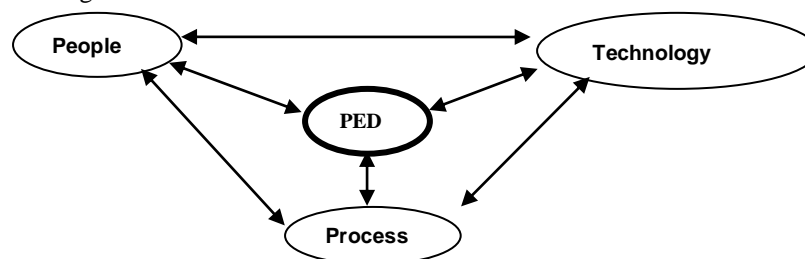


Figure 1. The DBP Model structure

The DBP focus is identify mobilize characteristics related to people's behavioral features like goals, persistency, planning and commitment (Oliveira, 2004). When working with people, we have the integration and balance between cognition and their ability through self-diagnosis. By working with technology, there is a DBP Model. This integration between people when they use technology is the cognition that occurs through the transformation of technology into desired results. When working with the process, there is DBP and this integration is the cognition that occurs through the methodology that was developed with flexible learning to acquire organizational knowledge. A final concept to consider in relation to knowledge management from the technological point of view would be the automated processing of knowledge, including through the use of an information technology system, in order to increase the value of collections of knowledge. The relationship between the People -Technologies, is a relation: [is - a], knowledge can be transformed by moving up the hierarchy of knowledge, a higher state in the same, that is, to what we might call "knowledge integrated" through a distributed system and easy access. As an example, we can transform the rules of data or cases using techniques of machine learning and data mining. The development of this rule is to give understanding of the philosophical questions that sometimes seem esoteric, but whose reasoning applied science in practice and often pass through pragmatic before going through the analyzers of our brain that are: Lexical - recognizes words; Syntactic-recognize the combination of words in the sentence; Semantic recognizes the meaning of words; Pragmatics the use of words. 'Human language uses sounds, symbols, gestures. Moreover, the signs of language are organized as a syntax-specific to each language or dialect. 'The language that compiles the human brain: is kaleidoscopic and for science can be seen as - Geometric Computing.'

### 3. DBP - MODEL ONTOLOGICAL RELATIONS AMONGST HUMAN RESOURCES IN PRACTICE

#### 3.1 Conceptual and Behavioral Relations in DBP

Classical logic (first order) itself is a simple language with a limited number of basic symbols. The level of detail depends on the variety of predicates, which, strictly speaking, do not belong to logic. In this paper we will use the DBP Model and ontological methodology to model all the relevant entities that are considered and represented. Different varieties of predicates represent the DBP Model and the ontological commitments.

For example: 'Person (P) is a (is-a) living, but every living being is a person'; 'Person is part of (part-of) of an organization'; 'Technology is part of (part - of) an organization', because technology is a (is-a) tool to achieve success. But not every tool is technology; 'Process is part of (part - of) an organization, it is a process (is-a) means to achieve success.' But not all processes lead to success. 'Technology, when there is a failure, (is-a) problem to be solved by a HR (Human Resources) expert'; For DBP Model, staff management is unique because it depends on each HR (person - person or people - people). The framework of this model is Personal Planning and is different for each individual, but not separate from part of the universe, it is the set of personal values and behavioral, to which they relate.

It then gives the relations between the elements described above as a method of confirmation of actions and plans chosen by the organization that is managed by HR. C<sub>1</sub>: equipment (a). It is a conceptual relationship of Person - Person. The HR is part of a team. Then, the behavioral relationships in the model DBP are satisfied. This does not mean they are alike, but belong to the same sets of successes/problems as 'a whole', as part of an organization and/or project, sharing everything (people, technology and process). Let a = b, then b = a. The successes and/or problems are symmetrical, having the same degree of similarity. They are transitive: if a = b and b = c then a = c. C<sub>2</sub>: interpersonal (b). It is a conceptual relationship of person - person. HR are related in a civilized manner, it is a peer relationship, cooperation, integration and participation. C<sub>3</sub>: performance (c). In relationships, person - technology and/or person - process, HR relate, so that their motivation levels are very high, planned, structured and with a mastery of subject knowledge to solve. C<sub>4</sub>: Work (d). In the conceptual relationships, Person - Person, Person - Technology; Person - Process, Technology - Process, HR interact seamlessly with the DBP Model and ontological methodology.

#### 3.2 Ontological Relationships and Mathematical Properties of DBP: Dynamic Balance Point

Ontological relationships and mathematical properties applied to Knowledge Manage are Human Resource practices in People - Processes, which are in balance in the model concept DBP work. In this concept described relations are satisfied with the respective properties as shown in table 1. HR is considered an entity of the relationships that satisfies the properties of reflexivity, transitivity and similarity: People Management (process) is related to work (action) of HR. Examples of relationships that occur in the organizational context can be found below: - Equivalence between the concepts Person - Process: If the person (a) is member of a team (b), part-is the team (b) relates to the process(c);  $a R b \wedge b R a \rightarrow a, b R c$ ; - Topological between the concepts Person - Person, Person - Process, People - Technology (which fulfills the properties of reflexivity, symmetry and transitivity). These relations consider the infrastructure, the environment and machines; -Functional, between the concepts Person - Person, Person - Process and People - Technology. For example, a director (person) is the owner of an organization that relates to equipment experts (people) of quality software development (CMM-process) and great technology; - Purpose. For Human Resource to achieve its goals, it is necessary to know the purposes of the organization. With the globalization of the economy and the advancement of technology, organizations are under pressure in their production processes and negotiating new agents, less cost and greater efficiency, highlighting the cost-performance.

Table 1. Ontological relations and their properties.

RELATIONSHIP/PROPERTIES	REFLECTIVE	MIRROR	TRANSITIVE
EQUIVALENCE	X	X	X
TAXONOMY			X
DEPENDENCE	X		X
TOPOLOGICA	X	X	X
CAUSAL			
FUNCTIONAL			X
TEMPORAL			X
SIMILAR	X	X	
CONDITIONAL			X
PURPOSIVE			X
THINGS/OBJECT			
COMPONENT/OBJECT			X
MEMBER/COLLECTION			
LOT/EARTH			
LOCATION/AREA			X
ACTIVITES FEATURES			X
PHASE/PROCESS			X

#### 4. ACKNOWLEDGEMENT AND DISCUSSION

The authors thank gratefully, people, technology, process and IADIS.

Thanks researcher at the Catholic University of Murcia (UCAM), Dra. Laura Gómez Campoy and her student Lilian Vilarino in the research plan, and welcome in the period 2014-2015 in the UCAM shared in Education, Labour Market and Professionalization, perfect knowledge 'imperfect world.' This Exchange Program is Included in the Program of Support to Mobility and Exchange of Knowledge by the Catholic University of Murcia - Spain and Brazil. The participant in this study identified the benefits of shared virtual private space implicitly in Diagnostic Evaluation in Organizations (DEO). The indicators for diagnosis, have been grouped into four different sequence to develop work areas. DBP MODEL APPLICATION: Dynamic Balance Point among people, processes and technologies:

HARMONOGRAMA DBP MODEL: The main objective of the methodology presented in this proposal is the determination of dynamic balance point (DBP) of Harmonograma namely the harmonic graph between organizational elements, whose scheme is shown in practice. The interrelationship between the vertices of Harmonograma has been the starting point for research that has developed through doctoral thesis at the Catholic University of Murcia-Spain.

#### 5. CONCLUSION

Cognitive organizational education is similar to the DBP Model in quantum physics. Quantum physics works with imaginary, mathematical forms (CAVI), which represent physical possibilities in the real world (CAV). The DBP Model: Dynamic Balance Point between people, processes and technologies in cognitive education, with the possibilities that we can feel, associate, calculate, integrate and interact with processes in the transactions of life. We analyze the equilibrium of the body to what is defined by feelings, we classify CAV to the feelings and sensations CAVI, and consequently, what we call the sensation of CAVI to feelings that come from an energy transformation. We have cognitive sensation, which is the feeling of Organization in Education. The cognitive sense is the movement to find a balance point, which implies the existence of a mobilizing event. Education becomes an element that will evaluate feeling, which will shift more or less according to the process, and with people.

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